Who Calls the Hawaii Poison Center?

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The types of callers and calls received by the Hawaii Poison Center's telephone triage service during the last fiscal year (July 1, 1996 through June 30, 1997) are described. A comparison to national data for human toxic exposures is provided. Methods included a review of Hawaii Poison Center statistics[1], the American Association of Poison Control Centers annual report[2], and retrospective recall of cases.

Introduction

The Hawaii Poison Center provides poison information services to the people of Hawaii, the Pacific Basin and Pacific Rim. The center operates a 24-hour hotline, 365 days a year (on Oahu phone 941-4411 or 911, and neighbor islands toll-free 1-800-362-3585). Specially trained registered nurses perform telephone triage, providing quick assessment and treatment of poison exposures for both lay people and medical professionals. Medication identification for imprinted tablets and capsules, and general information is available over the phone. Community poison prevention talks and professional education workshops on toxicology are conducted.

The Hawaii Poison Center received almost 12,000 calls during the last fiscal year. The majority of calls 10,297 (87%) were from the general public rather than medical professionals. Private individuals such as anxious parents whose children may have accidentally been poisoned called most frequently, followed by police requesting identification of confiscated medications, as well as businesses, schools, and other government agencies where a toxic exposure has occurred . (Figure 1) The remaining 1,585 calls (13%) were from medical professionals caring for the poisoned patient.

The Hawaii Poison Center assists medical professionals with assessing toxicity and recommending appropriate treatment. Information is provided over the phone and via fax. Emergency department calls are the most frequent followed by calls from other medical professionals, usually involving patients who directly called their personal physician, physicians' office, or clinic when a suspected poisoning occurred. (Figure 2)

A Profile of Hawaii Poison Center Calls

As expected, the majority of Hawaii Poison Center calls were from Oahu. For the neighbor islands, the Poison Center provides a particularly crucial service for callers where the closest emergency department or even a doctor's office can be many miles away. (Figure 3)

On Oahu, most of the calls came from the densely populated Honolulu (from Hawaii Kai to Salt Lake/Moanalua) 50%, and Leeward (from Aiea to Mililani/Wahiawa and to Waianae) areas 32%. The remaining calls were from the Windward side (Kailua, Kaneohe, Waimanalo) 15%, and the North Shore (from Kaaawa to Haleiwa/Waialua) 3%.

Human poison exposures accounted for most of the Hawaii Poison Center calls. These commonly involve ingestion, inhalation, eye or dermal contact with a possible or known poisonous substance. Remaining exposures include bites or stings from venomous insects and marine organisms.

The center also received informational calls which are general questions not involving an actual exposure, frequently prevention oriented in nature, and related to the safe handling of toxins. Examples include "can I use oleander flowers to make a lei and garnish food dishes?" or "how do we dispose of four gallons of chemicals that have been stored under the house for years?" Requests for medication identification are usually received from the local police departments for confiscated medications. Over the phone, the Hawaii Poison Center can identify most tablets or capsules with imprinted numbers and letters.

Hawaii Pediatricians' Perspective

"Countless times I've received desperate calls from parents of patients who have ingested the gamut of poisons from over-the-counter to prescription drugs, from solvents to dessicants. Each and every time I've relied on the Hawaii Poison Center - seconds away by phone, manned with calm professionalism, supported by the exhaustive information bank that is the Poisindex. And each and every time I was thankful the facility survived the variable winds of funding.

"What the Poison Center provides this community is more than the obvious financial benefits of reducing health costs and improving health care delivery. The center has created for these islands an intangible, but very real sense of security - a civic security blanket. It's something that money can't buy."

Jeffrey Lim, M.D., FAAP

"As a pediatrician in a solo private practice, the Hawaii Poison Center's specially trained and dedicated 24-hour staff provides me and my patients a means of immediate telephone consultation regarding any issues of medical toxicology. The Hawaii Poison Center's forty years of experience with "local" poisonings, as well as access to texts, files, and computerized databases makes it the best source of information and guidance on poisoning. Not only does the center provide an effective means of disseminating information, it assists with medical consultation, and arranging for follow-up, therefore reducing unnecessary hospital visits."

Michael Sia, M.D., M.P.H.

Figure 1.—Calls from General Public (FY 96-97)

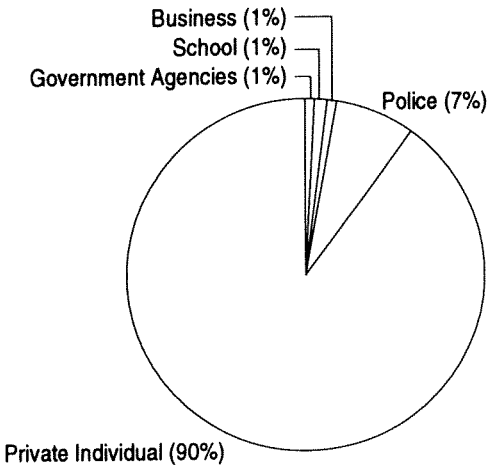

Figure 2.—Calls from Medical Professionals (FY 96-97)

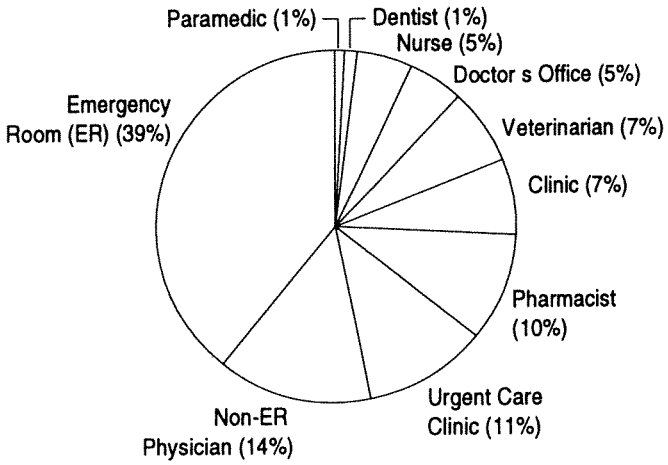

Figure 3.—Calls by Island (FY 96-97)

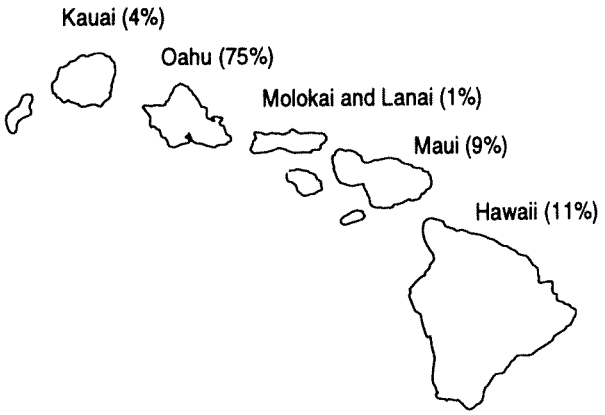

Figure 4.—Types of Calls (FY 96-97)

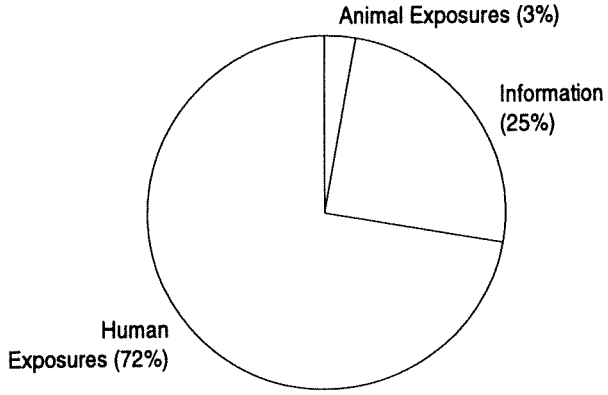

Table 1.—Age Gender of Human Poison Exposures

	Hawaii%	National %
Age		
5 years or less	39.7	52.8
6 - 12 years	5.9	6.8
13 -19 years	5.6	7.4
Adults > 20 years	37.5	27.3
Unknown	11.3	5.9
	100%	100%
Sex		
Female	43.8	50.9
Male	43.0	48.5
Unknown	13.2	0.5
	100%	100%

Table 2.—Reason for Human Poison Exposures

	Hawaii%	National %
Unintentional	79.4	85.7
Intentional	11.3	11.3
Unknown	9.2	0.3
Other	0.0	2.7
	100%	100%

Table 3.—Route of Exposure for Human Poison Exposures

	Hawaii%	National %
Ingestions	61.6	74.0
Bites and stings	12.8	3.8
Dermal	8.9	8.1
Inhalation	6.2	7.0
Ocular	5.7	5.9
Parenteral	0.2	0.3
Other	0.2	0.4
Unknown	4.4	0.4
	100%	100%

Table 4.—Substances Involved in Human Poison Exposures

	Hawaii%	National %
Medications (prescription, over-the-counter)	49.3	29.5
Household products (cleaning and personal care (cleaning and personal care products, hydrocarbons)	34.8	22.0
Envenomations (bites, stings)	15.1	4.4
Pesticides (includes herbicides, rodenticides)	7.7	4.0
Plants	6.9	5.3
Food products, food poisoning	5.9	3.4
Industrial products, chemicals	2.5	2.5
Liquor	1.1	2.6

NOTE: One poisoning exposure may involve multiple substances. Percentages are based on the total number of human exposures rather than the total number of substances.

Table 5.—Severity of Human Poison Exposures

	Hawaii%	National %
Non-toxic	10.7	18.3
Low-moderate toxicity	88.0	81.1
Highly toxic	1.3	0.4
	100%	100%

The remaining calls were from pet owners or veterinarians regarding poisoned animals including dogs, cats, rabbits, birds, turtles, pigs, chicken, and horses. Some examples of calls are "my bird drank bleach from a coffee stained mug" or "my dog may have eaten rat poison." Animal toxicology information is provided to the veterinarian as available. (Figure 4)

A Comparison Of Hawaii And National Human Poison Exposures

A comparison of human poison exposures for the Hawaii Poison Center (8,666 cases) and the American Association of Poison Control Center's national data (2,155,952 cases) is presented.

A summary of age and gender is displayed in Table 1. As expected the majority of both Hawaii and national cases involved children 5 years of age or less. Differences are noted with Hawaii having a higher incidence of adult poisonings, and national poisonings occur much more frequently in children age 5 years old and less. Hawaii and national gender distribution was nearly equal.

Unintentional (accidental) poisonings outnumbered intentional (suicidal gestures or experimentation) poisonings for both Hawaii and national exposures (Table 2).

Ingestions accounted for the vast majority of exposure routes for both Hawaii and national cases (Table 3). However Hawaii has a much higher incidence of bites and stings (12.8%) compared to the national data (3.8%). Hawaii's unique tropical environment surrounded by water results in more outdoor and ocean activities, and therefore increased exposure to venomous insects and marine organisms.

(Table 4) presents the most common substance categories listed by frequency of exposures. While medications, followed by household products are the most common, the incidence of these types of exposures is much greater in Hawaii. Again bites, stings, and pesticide exposures occur more frequently in Hawaii.

The vast majority of both Hawaii and national cases were low to moderate toxicity (Table 5) in which the patient is likely to develop symptoms unless treatment is undertaken to minimize the exposure. Based on the type of exposure, Poison Center staff advise the caller on first aid, home management, and/or referral for further medical care).

The next group of exposures were non-toxic in which the caller was reassured that the exposure was not dangerous. Poison Center staff educates these callers on poison prevention and poison-proofing the home. Some examples are silica gel dessicant, crayons, and balloons. Possible foreign body obstruction is a risk and is assessed.

The remaining exposures were highly toxic, life and health threatening, requiring referral to the nearest emergency department or ambulance. The Poison Center then calls the emergency department with details and stands by to assist the emergency department with toxicology information. These cases are often suicidal gestures.

Conclusion

The Hawaii Poison Center receives a variety of calls from urgent human poison exposures to general informational questions and pet exposures. Overall, the human poisoning cases reported to the Hawaii Poison Center are similar to national trends, with some toxins unique to Hawaii.

References

1. Hawaii Poison Center: Hawaii Poison Center Annual Report 1996-1997. Honolulu, HI: Hawaii Poison Center, 1997.
2. Litovitz T, Felberg L, Klein-Schwartz W, Berlin R, Morgan J: 1996 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System. *Am J Emerg Med* 1997; 15: 447-500.